AMENDMENT TO THE CLAIMS:

The following claim set replaces all prior versions, and listings, of claims in the application:

1. (currently amended) Process for producing cyclohexanone oxime comprising:
cycling an aqueous reaction medium containing residual hydroxylammonium from a cyclohexanone oxime synthesis reactor in which cyclohexanone oxime is produced by reaction of hydroxylammonium with cyclohexanone to a hydroxylammonium synthesis reactor in which hydroxylammonium is prepared by catalytic reduction of nitrate with hydrogen;
providing ~~mixing~~ a first acidic aqueous solution comprising hydroxylammonium and phosphate from at least a portion of the cycled aqueous reaction medium; and
mixing the first acidic aqueous solution with a second acidic aqueous solution comprising nitric acid within or upstream of the hydroxylammonium synthesis reactor, resulting in a third acidic aqueous solution comprising hydroxylammonium, phosphate and nitric acid, wherein [[in]]
the third acidic aqueous solution has a [[the]] total acid concentration minus the phosphate concentration which is lower than
$0.523*\ln([\text{hydroxylammonium}]/1.25) + 422/(T + 81)$ whereby [hydroxylammonium] is the concentration of hydroxylammonium in the third acidic aqueous solution, T is the temperature of the third acidic aqueous solution expressed in °C and all concentrations are expressed in mol/l.

2. (original) Process according to claim 1, wherein
$(c_{acid}(1)*V_1 + c_{acid}(2)*V_2)/(V_1+V_2)-(c_{phosphate}(1)*V_1 + c_{phosphate}(2)*V_2)/(V_1+V_2) <$
$0.523 * \ln(((c_{hyam}(1)*V_1 + c_{hyam}(2)*V_2/V_1V_2))/1.25) + 422/(T(3) + 81)$

wherein

$c_{acid}(1)$ and $c_{acid}(2)$ are the total acid concentration in the first acidic aqueous solution and in the second acidic aqueous solution respectively, expressed in mol/l,

$c_{phosphate}(1)$ and $c_{phosphate}(2)$ are the phosphate concentration in the first acidic aqueous solution and in the second acidic aqueous solution respectively, expressed in mol/l,

$c_{hyam}(1)$ and $c_{haym}(2)$ are concentration hydroxylammonium in the first acidic aqueous solution and in the second acidic aqueous solution respectively, expressed in mol/l,

T(3) is the temperature of the third acidic aqueous solution,

V_1 and V_2 are the volume of the first acidic aqueous solution and second acidic aqueous solution respectively.

3. (currently amended) Process according to claim 1, wherein providing the first acidic aqueous solution ~~the process~~ comprises adding hydroxylammonium to the first [[an]] acidic aqueous solution upstream of the hydroxylammonium synthesis reactor ~~comprising hydroxylammonium to obtain the first acidic aqueous solution~~.

4. (canceled)

5. (currently amended) Process according to claim [[4]] 3, wherein the aqueous reaction medium discharged from ~~leaving~~ the cyclohexanone oxime synthesis reactor is separated into at least a first part and a second part; and wherein the process comprises adding said hydroxylammonium to the first part of the aqueous reaction medium upstream of the hydroxylammonium synthesis reactor to obtain the first acidic aqueous solution; and wherein the second part is directed to an absorber unit for absorbing and/or oxidizing nitrogen oxides in the second part of the aqueous reaction medium to prepare nitric acid therefrom.

6. (previously presented) Process according to claim 1, wherein the process comprises adding hydroxylammonium to the third acidic aqueous solution.

7. (currently amended) Process according claim 1, <u>further comprising separating a portion of a hydroxylammonium enriched aqueous reaction medium discharged from the hydroxylammonium synthesis reactor and adding the separated portion of the hydroxylammonium enriched aqueous reaction medium to the aqueous reaction medium</u> ~~wherein an aqueous reaction medium leaving a hydroxylammonium synthesis reactor is used to add said hydroxylammonium to said acidic aqueous solution~~.

8. (currently amended) Process according to claim 1, wherein the process comprises feeding the third acidic aqueous solution to [[a]] <u>the</u> hydroxylammonium synthesis reactor ~~in which hydroxylammonium is prepared by catalytic reduction of nitrate with hydrogen~~.

9. (currently amended) Process according to claim 1, <u>comprising mixing</u> ~~wherein~~ the third acidic aqueous solution ~~is mixed~~ with an acidic aqueous solution comprising nitric acid~~, said mixing preferably being carried out~~ at a temperature between 20 and 80 °C, resulting in a fourth acidic aqueous solution comprising hydroxylammonium, phosphate and nitric acid wherein

$c_{acid}(4)-c_{phosphate}(4) < 0.\ 523*\ln(c_{hyam}(4)/1.25) + 422/(T(4) + 81)$ wherein

$c_{acid}(4)$ = total acid concentration in the fourth acidic aqueous solution, expressed in mol/l,

$c_{phosphate}(4)$ = phosphate concentration in the fourth acidic aqueous solution, expressed in mol/l,

$c_{hyam}(4)$ = concentration hydroxylammonium in the fourth acidic aqueous solution, expressed in mol/l,

$T(4)$ = temperature in the fourth acidic aqueous solution expressed in °C.

10. (currently amended) Process according to claim 9, wherein the process comprises feeding the fourth acidic aqueous solution to [[a]] the hydroxylammonium synthesis reactor ~~in which hydroxylammonium is prepared by catalytic reduction of nitrate with hydrogen~~.

11. (previously presented) Process according to claim 9, wherein the process comprises adding hydroxylammonium to the third acidic aqueous solution.

12. (previously presented) Process according to claim [[1]] 11, further comprising separating a portion of a hydroxylammonium enriched aqueous reaction medium discharged from the hydroxylammonium synthesis reactor and adding the separated portion of the hydroxylammonium enriched aqueous reaction medium to the third acidic ~~wherein an~~ aqueous solution ~~reaction medium leaving a hydroxylammonium synthesis reactor is used to add said hydroxylammonium to the third acidic aqueous solution~~.

13. (currently amended) Process according to claim 1, wherein the mixing of the first acidic aqueous solution and second acidic aqueous solution is performed in [[a]] the hydroxylammonium synthesis reactor ~~in which hydroxylammonium is prepared by catalytic reduction of nitrate with hydrogen~~.

14. (currently amended) Process according to claim 9, wherein the mixing of the third acidic aqueous solution and said acidic aqueous solution comprising nitric acid is performed in [[a]] the hydroxylammonium synthesis reactor ~~in which hydroxylammonium is prepared by catalytic reduction of nitrate with hydrogen~~.

15. (canceled)

16. (currently amended) Process according to claim 1, wherein the first acidic aqueous solution is an aqueous reaction medium discharged from the ~~leaving a~~ cyclohexanone oxime synthesis reactor ~~is used as first acidic aqueous solution~~.

17. (previously presented) Process according to claim 1, wherein the second acidic aqueous solution is obtained by absorbing and oxidizing nitrogen oxides in an aqueous solution.

18. (previously presented) Process according to claim 1, wherein said mixing of the first acidic aqueous solution with the second acidic aqueous solution is carried out at a temperature between 20 and 80 °C.

19. (new) Process according to claim 1, wherein the second acidic aqueous solution comprises nitric oxide.

20. (new) Process according to claim 19, comprising separately feeding the first and second acidic aqueous solutions to the hydroxylammonium synthesis reactor, and mixing the first and second acidic aqueous solutions within the hydroxylammonium synthesis reactor so that the third acidic aqueous solution is present in the hydroxylammonium synthesis reactor.